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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/728,921	12/01/2000	Nils Vidar Jespersen	VF-03253	5527
28581	7590	10/04/2004	EXAMINER	
DUANE MORRIS LLP 100 COLLEGE ROAD WEST, SUITE 100 PRINCETON, NJ 08540-6604			SOBUTKA, PHILIP	
			ART UNIT	PAPER NUMBER
			2684	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<p>Application No.</p> <p align="center">09/728,921</p>	<p>Applicant(s)</p> <p align="center">JESPERSEN, NILS VIDAR</p>	
	<p>Examiner</p> <p align="center">Philip J. Sobutka</p>	<p>Art Unit</p> <p align="center">2684</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6 is/are allowed.
- 6) ☒ Claim(s) 7-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 7,8,10 are rejected under 35 U.S.C. 102(b) as being anticipated by Dent (US 5,642,358).

Consider claim 7. A method for transmitting, through an analog beam former, wideband signals and at least some of a plurality of independent signals, each of which independent signals has a bandwidth no greater than one-fifth of that of said wideband signals (Dent see especially fig 5(a), said method comprising the steps of: receiving unguided electromagnetic radiation including (a) a plurality of said independent signals having bandwidths suitable for audio use, each of said independent signals being modulated onto a sub carrier which is in turn modulated onto a carrier and (b) said wideband signals, to thereby produce signals representing combined wideband signals and narrowband channels (Dent see especially col 2, lines 52-65); channelizing the combined wideband and narrowband channels to thereby extract separated independent narrowband signals; channelizing the combined wideband and narrowband channels, to thereby extract separated wideband signals (Dent see fig 10, items 200,201); combining those of the separated narrowband signals and wideband signals which are associated to be down linked over a particular downlink antenna beam, to

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thereby produce antenna beam signals (Dent fig 10, items 203); beam forming said antenna beam signals to produce plural antenna element guided wave signals; and coupling each of the antenna element guided wave signals to the guided wave input port of a different antenna element of an antenna array (Dent col 11, lines 1-40).

As to claim 8, note that Dent teaches digital processing of the signals (Dent see especially col 7, lines 14-50).

As to claim 10, note that Dent teaches the bandwidth of audio channels is limited to 10 KHz (Dent col 4, lines 47,62-68)

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Lazaris-Brunner et al (US 6,408,164).

Consider claim 9, Dent teaches everything claimed as shown above, including demodulating the individual signals (Dent see especially col 7, lines 15-45) Dent lacks a teaching of the use of bandwidth filters on the individual signals. Lazaris-Brunner teaches a repeater for satellite signals in which the demodulated individual signals are band pass filtered (Lazaris-Brunner fig 1, items 28). It would have been obvious to one of ordinary skill in the art to modify Dent to use individual band pass filters as taught by Lazaris-Brunner in order to eliminate spurious signals from the retransmitted beams.

***Allowable Subject Matter***

5. Claims 1-6 are allowed.

Consider claim 1. The nearest prior art as shown in Dent fails to teach a communication spacecraft for providing cellular communications among a plurality of user terminals and ground stations, by way of paths having a bandwidth generally suited for audio signals, and for providing communications by way of at least one path having a bandwidth at least five times greater than the bandwidth suitable for audio signals, comprising: a downlink antenna including a plurality of antenna elements, an analog beam former including a plurality of beam input ports and a plurality of elemental antenna ports, each of which is coupled to one of the antenna elements, for producing at least one independent downlink beam, so that plural downlink antenna beams are formed when signals are applied to a plurality of said beam input ports of said analog beam former; receiving means for receiving uplink signals and outputting the signals on a plurality of separate paths; a narrowband digital channelizer having individual channel bandwidths suitable for audio signals, including a plurality of input ports and a plurality of output ports, at least some of the input ports of the digital channelizer being coupled by way of corresponding ones of the plurality of separate paths to the receiving means, for receiving the uplink signals from a plurality of said separate paths, and for extracting each of the independent narrowband signals from at least one carrier, to thereby produce separated independent narrowband signals on the plurality of output ports of the digital channelizer; a wideband channelizer having an individual channel bandwidth at least five times greater than that of an individual channel of the narrowband

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channelizer, the wideband channelizer being coupled to at least a portion of said receiving means, for extracting at least one wideband signal from the carrier, to thereby produce separated independent wideband signals; a switching arrangement coupled to the plurality of output ports of the narrowband channelizer and to the wideband channelizer, for receiving the independent narrowband signals and the wideband signals, and for grouping together those signals associated with each of the plural downlink antenna beams, to thereby produce combined signals grouped by beam, where the combined signals may include any number of wideband signals, including the number zero; and a coupling arrangement coupled to said switching arrangement and to the beam former, for coupling the combined signals grouped by beam to that one of the input ports of the beam former associated with the beam of the group.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Loseke (US 6,449,244) has been cited to show other combined wideband/narrowband arrangements.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip J. Sobutka whose telephone number is 703-305-4825. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone numbers for

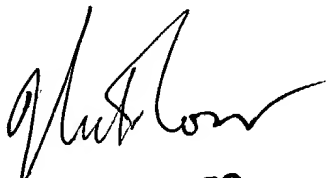
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the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Philip Sobutka  
(703) 305-4825

September 26, 2004



**NICK CORSARO**  
**PRIMARY EXAMINER**